

A. EXECUTIVE SUMMARY

1. Background

Five years ago, the Idaho Legislature enacted the Municipal Water Rights Act of 1996 (“1996 Act” or the “Act”). This statute codified substantive and procedural law embodying what has come to be known as the “growing communities doctrine.” The thrust of the Act is to encourage municipal providers to establish a long term “planning horizon” and to engage in planning for water rights acquisition to ensure that they will be able to satisfy the needs of their customers throughout the planning horizon. Water rights held for this purpose are referred to as the “planning horizon component” (“PHC”) of the provider’s portfolio of rights.

This *Integrated Municipal Application Package* (“IMAP”) is submitted by United Water Idaho Inc. (“United Water,” “UWID” or the “Company”) to the Idaho Department of Water Resources (“IDWR” or the “Department”) as a direct result of the 1996 Act. Its purpose is to bring UWID’s portfolio of water rights¹ within the protection and obligations of the 1996 Act.

The core of the IMAP consists of two sets of change applications: First, UWID seeks to change 93 ground water rights (Tab H). Second, UWID seeks to amend 19 water right permits,² all but one of which are for ground water³ (Tab I). These applications are supported by a series of spreadsheets, identifying and describing various aspects of the water rights in UWID’s portfolio (Tabs J through N). Finally, the IMAP documents the various planning requirements under the 1996 Act:

¹In addition to water rights and permits addressed in this IMAP, the Company owns certain other entitlements to the use of surface water. UWID is not seeking to change the water rights behind these entitlements. They are fully disclosed, taken into account, and discussed in Part E7 at page 38. In addition, UWID owns a contract entitlement to water from Anderson Ranch Reservoir which is used solely for mitigation purposes in connection with Water Right No. 63-02892. Because this right does not supply water to UWID’s customers, but instead benefits other water users, it is not deemed part of UWID’s portfolio for purposes of quantifying UWID’s planning horizon component.

²UWID is now in the process of proving up on these permits. If some or all of them are approved as licenses prior to the time the Department completes processing of this IMAP, we request that, in each case, the *Application for Amendment of Permit* be treated as an *Application for Transfer of Water Right*.

³The only surface water permit in UWID’s portfolio is its Marden Treatment Plant right from the Boise River, No. 63-12055. By including this permit in the IMAP, United Water does not intend to have this permit treated as an alternate point of diversion for any of its ground water rights.

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| Tab B | ± | Definitions |
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2. Planning Horizon Established

The IMAP establishes a planning horizon of fifty years. If the IMAP is approved by the Department, this will authorize UWID to acquire water rights for its portfolio sufficient to serve reasonably anticipated needs over the next fifty years. Water rights held for this purpose pursuant to a such a documented planning horizon are expressly declared to constitute "beneficial use" of the state's water.

The IMAP then sets about determining the quantity of water which will be necessary to serve UWID's customers in the year 2050.

3. Planning Area Mapped

The first step in determining projected demand is to delineate the area which will be served, termed the "planning area." The planning area is shown graphically on the accompanying map (Appendix B). Many areas which are likely to be served by UWID in the future (and even some areas which are served today) were nevertheless excluded from the planning area.⁴

First, the planning area was limited to Ada County. There are two small, non-contiguous areas in Canyon County served by UWID. They account for such a small fraction of the Company's systemwide demand, however, that we could not justify complicating the population projection analysis by including them within the planning area at this time. It should be noted, however, that the points of diversion associated with these two Canyon County neighborhoods are included in the "alternative points of diversion"

⁴The planning area, as its name implies, is solely a planning device. It does not control or limit the provider's ultimate service area. The effect of exclusions of potential service areas from the planning area is solely to reduce the quantity of water which UWID is entitled to claim as its planning horizon component ("PHC"). On the other hand, the quantity of water actually delivered today to areas outside the planning area is included in the total service projection. (See footnote 18 at 27.) The inclusion or exclusion of an area from the planning area has no legal effect on what areas UWID ultimately may be authorized to serve with its PHC water rights. UWID's actual "certificated area" is determined from time to time by the PUC. Under the 1996 Act, the Company's "service area" for these water rights will follow changes in the certificated area automatically.

change discussed in Part D2 at page 15, even though they are not part of the “planning area.”

Second, the planning area excludes communities which have their own water supply system, such as Garden City, Meridian, Kuna, Star and parts of Eagle.

Third, as required by the 1996 Act, the planning area excludes certain areas which are subject to unresolved planning conflicts among competing governmental entities or to competition among potential water providers. For this reason, the planning area does not include growth areas surrounding Kuna and Star, and it excludes the entire Eagle area.

4. Year 2050 Population Projected

Next the IMAP predicts population for the planning area through the year 2050. UWID contracted with John S. Church, President of Idaho Economics, to assist it in making accurate population projections. Mr. Church estimated the planning area’s population through the year 2050 using a sophisticated econometric model that predicts population by estimating the natural increase of the existing population and then adjusting for the net migration into the area resulting from the predicted creation of new jobs. The model generates a state-wide population estimate that is then broken down by county. The model predicts an Ada County population of 813,966 in the year 2050.

Since UWID’s planning area covers only part of Ada County, it was necessary to further refine the Ada County population estimate to predict which portion of it will reside in the planning area. This was done by utilizing the distribution of the population from the Community Planning Association of Southwest Idaho’s (“Compass”) population forecast of Ada County by traffic analysis zones (“TAZs”). TAZs are infrastructure and zoning based geographic areas used by government agencies for transportation planning in the Treasure Valley. Compass’ existing population forecast is somewhat dated, first published in 1997, and it was necessary to update the projections for the TAZs to reflect Mr. Church’s more current population forecast. Using Compass’ 1997 distribution as a starting point, and then incorporating Compass’ 1999 estimates to further refine the calibration, United Water allocated the population from its fifty-year forecast to the TAZs. United Water then overlayed the TAZs on the planning area map, identified those TAZs within its planning area, and totaled the population estimates for all those TAZs in the planning area. The result is a planning area population of 540,020—roughly 66% of the total predicted 2050 Ada County population.

Comparing the projected population of 540,020 to UWID’s current service area (as of 2000) population of 214,615 yields an annual rate of growth of 2.08 percent over the fifty year period. Considering that the County has experienced 3.22 percent growth rate for the previous 30 years, and a 3.50 percent growth rate over the past decade, UWID believes

that its projection is appropriate and, indeed, quite conservative.

5. Projecting Total Annual Demand

Predicting population is only the first step in calculating anticipated future water demand. The next step is to calculate the quantity of water that the population is expected to consume. Whether that population comes in the form of landscaped suburban homes, high density apartments or commercial uses will substantially affect water demand. Likewise, the price elasticity of water can affect aggregate demand.

To calculate total water demand, United first predicted the number of residential and commercial customers it expected to have in the planning area in 2050 based on the same econometric model used for predicting total population. The model distributed the predicted population into households (residential customers) and predicted the level of commercial development that would serve those households and a commuting population from western Ada and Canyon Counties.

Next, UWID estimated the average demand for residential and commercial customers in the year 2050. UWID began by calculating a bi-monthly average demand for residential and commercial customers using 15 years of historical sales data and collecting monthly precipitation, temperature, and water price data to establish a comprehensive database. Using a regression analysis, these same variables, and an independent variable that accounts for conservation effects, then were used to estimate the bi-monthly and annual future residential and commercial demand each year through 2050.

To the projected annual residential and commercial water demands, UWID added other system demands that tap its water delivery system. These include consumption by (1) public sector customers, (2) a small number of other customers that do not fit in any other category, (3) fire hydrant use, (4) system losses, and (5) UWID's own use. The total predicted demand for each category was estimated using ratios calculated by analyzing the historical relationship between each category to either annual residential and commercial demand or total system water production. UWID then calculated the total estimated demand by summing the totals from each category. The result is a predicted demand of approximately 48 billion gallons annually in the year 2050.

This figure includes a price effect on water demand that equals the rate of inflation, which is expected to average 2.5% over the planning horizon. However, because UWID anticipates the construction of significant infrastructure improvements in the early years of the planning horizon to meet anticipated demand, it adjusted the calculation to predict customers' response to water prices that increase at a rate faster than inflation in the first half of the planning horizon. UWID calculated this price effect by predicting a series of six

tiered price increases over the planning horizon's first 20 years in an effort to match historical trends in both the timing and magnitude of rate increases. The result reduced the total predicted demand by over 1 billion gallons to approximately 46.8 billion gallons. This compares to a year 2000 annual demand of approximately 17 billion gallons, equating to a 2.01 annual percentage increase over the 50 year planning horizon.

UWID next assessed whether the availability of non-potable irrigation ("NPI")⁵ in the planning area would reduce demand. For this analysis, UWID estimated the potential availability for NPI in the planning area starting with *IDWR Land Use Cover Data* from 1994 which identifies irrigated acres. Using year 2000 areal photography and physical inspections, UWID updated its estimate of the available NPI acreage. In the end, a very limited number of currently irrigated acres are available in the planning area for conversion to NPI. Furthermore, it is expected that the high cost of retrofitting will not make conversion to NPI economical in developed areas where it does not already exist. UWID calculated the effect on total demand if NPI is used on those lands where it would be available. The reduction was so minor that it did not change the estimated demand.

6. Quantification of Peak Demand

Municipal water rights are quantified only in terms of peak flow, not annual volume. Consequently, the final step was to convert the predicted annual consumption to predict peak flow.

Comparing the relationship between peak month production and peak day production over 12 years of available data, UWID determined that the annual daily peak water production represents 3.82 percent of annual peak month production. (In other words, the hottest day demand can be predicted from the hottest month demand, and this relationship has proven stable over the years.)

By breaking annual demand into monthly totals and then applying the daily peaking factor to the predicted peak month production in 2050, UWID predicts peak day demand of 268 million gallons, or a daily flow rate of 416.8 cfs in 2050.⁶ Compared to the current

⁵By "non-potable irrigation" we refer to separate (also called "dual") domestic lawn irrigation systems which apply non-potable water from non-municipal supplies (such as irrigation canals). These are sometimes referred to as "pressurized" irrigation systems to distinguish them from non-pressurized crop irrigation. We do not use that term, however, because it fails to distinguish pressurized irrigation systems using municipal water.

⁶This is a conservative calculation that likely underestimates the instantaneous peak demand on the system because it averages out fluctuating demand over a 24-hour period. In reality, on the peak day, demand will fluctuate and instantaneous demand (typically highest in the morning) on the system will be

peak demand of 147.5 cfs, this reflects an annual increase of 2.10 percent.

The bottom line is reflected in Table 11 at page 50. UWID is entitled to hold a water rights portfolio of up to 416.8 cfs. Its current portfolio measures 307.58, meaning that UWID is entitled to acquire additional water rights totaling 109.23 cfs if this IMAP is approved.

7. Additional Changes

In addition in determining the size of UWID's planning horizon component, the IMAP seeks a variety of changes in the Company's current portfolio of water rights. The most notable change is to make each point of diversion for every ground water right an alternative point of diversion for every ground water right in UWID's portfolio. UWID will agree to a condition ensuring that this change will not be used to cause well interference to any existing, senior priority well. In other words, any well in existence at the time this IMAP is improved will not be subject to any additional well interference if the request for alternate points of diversion is approved.

UWID also has provided a consistent description of its service areas for all its water rights, as well as a uniform statement of the nature of use and season of use for each right.

Finally, inconsistent methods of quantification are proposed to be eliminated, so that all rights may be expressed and measured in terms of peak flow (cfs). In so doing, appropriate adjustments are made to ensure against any enlargement.

higher than 416.8 cfs. However, UWID currently uses small reservoirs to help meet these fluctuating peaks and anticipates that it will continue to do so in the future, making average peak day demand a reasonable estimate of the system's peak.